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AUTHORITY

ONR ltr 13 Sep 1977

AD 223924

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CONDITIONS AFFECTING THE MILITARY UTILIZATION OF PEER RATINGS: THE NEWPORT STUDY

III. FRIENDSHIP CHOICE

NAVY TECHNICAL REPORT 3-56
ONR CONTRACT Nonr 760(06)
April, 1956

E. P. Hollander
Principal Investigator

Carnegie Institute of Technology
Psychological Laboratories
Pittsburgh 13, Pennsylvania

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Acknowledgment

No research project conducted in the field may achieve any measure of success without the day-to-day cooperation of the personnel associated with the field activity itself. We were fortunate, indeed, to have such cooperation at Newport. To adequately catalogue the names of all those individuals to whom we are indebted to their support of this project would be no small feat.

It must suffice, therefore, for us to express our sincere sense of gratitude to the following individuals who exemplified the splendid tone of cooperation and good fellowship we found at the Officer Candidate School: Captain W. B. Perkins, USN, Commanding Officer of the Naval Schools Command and Officer-in-Charge of the OCS; Commander A. W. Venne, Jr., USN, Assistant Officer-in-Charge; Commander David Bryan, USN, Military Director; Lieutenant Commander John C. Powell, USN, Second Battalion Officer; and Chief Joseph F. Gleba, MAC, USN, of the Machine Records Office.

Finally, it would not do to conclude this expression of thanks without a nod to the student personnel of OCS Class 23 for their extraordinary fortitude in the face of a periodic onslaught of psychological devices.

Summary

From research completed with 23 trainee sections at the Naval OCS in Newport, data are presented regarding the effect of friendship choice on the in-training validity of peer nominations using different characteristics to be rated, different instructional sets, and varying time levels of administration. The basic criterion applied was final academic average. The following major findings are reported:

1. An average of about two out of five acknowledged friends were nominated "high" on peer ratings; significantly fewer friends were nominated "high" at later stages of training than were nominated "high" at the outset of training.

2. In general, significantly fewer friends were nominated "high" on the forms having to do with "interest in and enthusiasm for the Naval Service" (IE) and "probability of success in OCS" (OC) than on the forms dealing with "success as a future officer" (FO) or "leadership qualities" (LQ).

3. A "friendship score" based upon the number of friendship choices received by a subject was found to be significantly correlated with peer nomination scores, but not systematically related to the academic performance criterion. Different forms yielded different relationships with friendship--once again IE and OC were significantly lower than FO and LQ.

4. These relationships were not significantly different for the "research" set as against the "administrative" set.

5. When validity coefficients for peer nomination scores were corrected by partialing friendship, it was found that they regularly retained their level of magnitude, thus demonstrating that the validity of peer ratings--at least for this criterion--was not unduly altered by a "popularity" factor.

Although friends were favored for high nominations, this study supports the view that peer nominations yield prediction of a performance criterion without adverse effects from friendship ties. The evidence suggests the possibility that this relationship may operate so as to favor as friends those of high status on certain other continua--i.e., "success as a future officer"--rather than to simply create high status for friends. The net effect on validity, therefore, is minimal.

I. Introduction

This is the third in a series of reports to deal with a large-scale study of peer ratings completed at the U. S. Naval School, Officer Candidate (OCS) in Newport, Rhode Island, during the summer and fall of 1955.

As has been noted in the preceding reports (3, 4), this project was conceived to eventually provide more information regarding the application of peer ratings--specifically, "peer nominations"--as a supplemental screening device in the OCS. In research terms, the basic objectives involved were the determination of the reliability and validity of peer ratings under various instructional sets and time exposures.

The first report provided data regarding the single-stage and repeat reliability for the various peer rating forms administered at different time levels (3). In the second report, attention was turned to the validity of these measures in predicting in-training criteria (4). Now we shall concern ourselves with another aspect of the problem, i.e., the relationship of friendship choice to peer ratings and, ultimately, to prediction.

II. Background of the Problem

In practice, the so-called peer rating involves each group member's evaluation of his peers on some recognizable quality or set of characteristics which are manifested directly, or inferable indirectly, from day-to-day, personal interactions. Such individual evaluations are then integrated into a composite score reflecting each person's standing in his group. The advantage of this technique appears to rest in its ability to yield unique supplementary data drawn from intimate contact among the personnel involved.

Peer rating procedures have already demonstrated a relatively high order of predictability against various performance criteria, with a substantial number of military groups (e.g., 5, 8, 9, 10, 13, 14, 15, 16, 17). It may be noted, too, that the greatest development of peer ratings has taken place within the military services (2). Several questions remain to be answered, however, before optimum utilization of peer ratings may be effected.

III. Statement of the Problem

In general, three core problems were specified for study: first, the length of time which the group must have spent together before peer ratings will approximate maximized validity and reliability; second, the presence of any differential effects on validity and reliability accruing from the use of peer ratings with a "research" set as against those with a "real" set; and, finally, the variations in validity and reliability which may be attributable to the nature of the quality on which the rater is instructed to rate the ratee. These have already been treated in the aforementioned reports. In the current report we shall confine our interest to data bearing on the relationship of "popularity" to the validity of peer ratings.

IV. Subjects and Setting

Through the joint cooperation of the Office of Naval Research, the Bureau of Naval Personnel, and the Naval OCS itself, the entire input of OCS Class 23 was made available for this study. The sample entered training in July of 1955 and consisted of 23 sections numbering about 30 men each; there is no reason to suppose that assignment to these sections was on anything other than a random basis. The total N available for study exceeded 700, at the beginning of this project.

The program at the OCS is of sixteen weeks' duration, with an orientation week introduced before the actual onset of the training cycle. During this one-week period, student personnel are assigned to sections, receive books and clothing, take classification tests, receive orientation lectures, but do not attend formal classes, as such.

Except for a small minority drawn from the fleet--in this class numbering fewer than 5%--all of the students are graduates of four-year college programs. The mean age of this class was 22 years with only a minimal dispersion above this figure.

Students at the OCS are selected according to rigorous mental and physical standards. All are volunteers, and must agree to remain on active duty as officers for three years following the successful conclusion of training.

V. Instruments

Four key sociometric forms of the peer nomination variety were utilized. Based upon previous research conducted at Newport by the American Institute for Research (11), a primary form calling for nominations on "success as a future Naval Officer" (FO) was administered to all sections. This form was seen to be of particular worth in its likely prediction of more distant, fleet performance criteria. In addition to this primary form, each section received one of three so-called secondary forms, i.e., "leadership qualities" (LQ), "interest in and enthusiasm for the Naval Service" (IE), and "probability of success in OCS" (OC). The selection of these forms rested upon a need to tap those characteristics which might relate to both in-training and post-training performance--i.e., interpersonal qualities, motivation, and ability having evident relevance to OCS performance.

Cutting across this pattern approximately half the sections received a "research" set with the explicit point, appearing on their peer nomination forms, that "The results of these ratings are to be used for research purposes only and will not affect your Navy career." The other sections were given equally explicit instructions that "The results of these ratings may be used for administrative purposes." This split in treatment was designed to provide data on the differential reliability and validity resulting from administration under a "research" set as against an "administrative" set.

In all there were eight possible forms, i.e., four characteristics to be rated times two sets. In Appendix A, form FO-RO is reproduced as an illustration of the format followed with all forms. Since this was varied only slightly to accommodate alternative instruction, the reader may view this as an example of the general instructions applied. All of the forms required five "high" and five "low" nominations in order of preference. An alphabetical section roster was attached.

In addition to this basic pattern, at the close of every administration, each subject was asked to list five people in his section who were actual or potential friends. The form involved is reproduced in Appendix B; as will be noted, a "research" set was used exclusively in the administration of this form.

VI. Study Design

The ultimate design of the study is reflected in Table I. It will be seen that the 23 sections were divided into six blocks of four sections each, except for one block which, of necessity, was limited to three sections. Sections were assigned to blocks on a rotation basis from the five companies in the second battalion which comprised the class, i.e., How, Jig, King,

Love, Mike. Such differences as might exist between companies were thus restricted in their conceivable ability to contaminate the study design.

Once having been assigned to a given block, the treatment of any given section was identical through training. Three major administrations of these forms were carried on during the training cycle: the first occurred during the so-called "orientation week"--referred to hereafter as the "0" week--after the subjects had been together in their respective sections for four to five days; at the end of the third week of training ("3" week); and, at the end of the sixth week of training ("6" week). The design appearing in Table I was replicated, therefore, a total of three times. At the end of the thirteenth week of training, another administration of forms was made, but this last time only the primary, "future officer," form was used. In all other respects, the design was identical for the latter administration.

VII. Scoring

Following the pattern utilized in other studies (e.g., 5, 13), a direct weighting procedure was applied to derive peer nomination scores. The highest nominee was awarded a plus 5, the next highest, a plus 4, and so on through the five "highs"; similarly, the lowest nominee was assigned a minus 5, the next lowest, a minus 4, and so on. An algebraic sum was then obtained which was subsequently treated so as to yield a positive, two-digit score reflecting the status of the individual in his section. The precise procedure involved is described elsewhere (3, 4).

Friendship scores were derived by a simple summation of people choosing the subject. This may be taken as a kind of "popularity index," although it is subject to instability, as might be anticipated.

TABLE I

Study Design* Indicating
Forms Used and Sections to Which Applied

Section Allocation

Forms**	Set	
	Research (RO)	Administrative (AU)
"Future Officer" (FO) "Interest & Enthusiasm" (IE)	H-1, J-1, L-1, M-1 A/	H-2, K-1, L-2, M-2 B/
"Future Officer" (FO) "Success in OCS" (OC)	H-3, H-4, J-4, K-4 C/	H-5, J-5, K-5 D/
"Future Officer" (FO) "Leadership Qualities" (LQ)	J-2, K-2, L-3, M-3 E/	J-3, K-3, L-4, M-4 F/

*This design was applied at the end of the orientation week, third week, sixth week, and—except for the omission of the secondary forms--the thirteenth week.

**Note that each section received two forms.

/Signifies group code designation.

VIII. Reliability of Measures

Two major approaches may be followed in determining the reliability of peer nomination data: first, calculation of internal consistency through correlation of scores obtained by an odd-even split of raters corrected by the Spearman-Brown formula; second, calculation of consistency over time through repeat administration.

The first report in this series (3) covers the reliability obtained for all forms, under both sets, at various time levels, using both the single-stage and longitudinal approaches. In general, it was found that the single-stage reliabilities approximate .90--even where the sections had been together only during the orientation week. Thus, there was no significant gain in reliability at the later time levels. As regards repeat reliability, a high sequential intercorrelation was found for the scores obtained from the same form administered at different time levels. No significant difference was discerned in either the single-stage or repeat reliabilities of scores obtained from comparable forms administered under the "research" as against the "administrative" set.

Odd-even reliabilities for the friendship score, when corrected, vary from .50 at the orientation week to .66 at the thirteenth week, with an N of some 120 subjects representing four randomly-selected sections. Considering its highly idiosyncratic nature, the low reliabilities for friendship are not surprising.

IX. Validity of Measures

In the second report (4), in-training validity was established for the various forms, under the two sets, at various time levels, with final academic average in OCS serving as a major criterion. It was found that the form which best predicted this criterion was the one requiring

nominations on "probability of success in OCS." The significance of this form's prediction was found at every stage of administration and for both sets. Further details on validity will be found in the basic report (4).

X. Friendship as an Issue

Despite the many demonstrations of the validity of peer ratings, resistance to their use persists. Foremost among the objections raised against them is the theme that they represent a sheer contest for popularity. Implicit in this view are several assumptions particularly worthy of note: first, that individuals will be more inclined to favor friends as "high" nominees; second, that this bias toward friends will operate independently of the characteristic to be rated, so long as it is a virtuous one; third, that the peer rating score, consequently, will be heavily weighted with "popularity"; and, fourth, that this is a bad state of affairs.

Previous work has already demonstrated that there is nowhere near a one-to-one correspondence between being chosen as a friend and being nominated as "high" on a peer nomination form (7). Furthermore, this same study indicates that--even where some friends are nominated "high"-- the average number involved varies from form to form. It should be noted, too, that the friendship score, taken as an index of popularity, shows a differential relationship to forms which are based upon different characteristics.

The essence of the matter, however, is whether the friendship factor serves to limit the validity of peer ratings. In the current study, we are in a position to cast some light on this issue by considering both the relationships of friendship choice to nominations and the relationship of aggregate friendship choice (the "friendship score") to peer nomination scores and the in-training criterion.

XI. Results and Discussion

Paralleling the analysis previously noted (7), Table II presents the mean number of friends chosen "high" on different peer nomination forms, at three time levels, under two sets. Overall, the data reveal that an average of about two out of the five acknowledged friends named by each subject were nominated as one of his "high" nominees. It would not do to suggest that this reveals no bias in favor of friends; clearly, with five "high" choices to be made, among roughly thirty people, there is significance in the fact that even an average of two out of five friends appear among these five. Yet this is by no means a total correspondence. Moreover, it remains to be determined whether those friends who were nominated "high" might not be deserving of this status.

To gain a picture of the relationships at play in Table II, an analysis of variance was completed and is summarized in Table IIa. The limiting feature of this analysis was the assumption of one case per cell, necessitated in part by the variant N's involved and the conceivable contamination introduced by FO's correlation with other forms. While it is true that this diminishes power, it has the virtue of demanding more marked differences to yield significance; thus, F ratios which are significant may be considered to be so under a handicap. The analysis, therefore, is highly conservative in the direction of rendering non-significant findings.

Study of Table IIa reveals that both form and time yield significant independent effects, while set does not. Pursuing these points, we find that significantly fewer friends (1% level) are nominated as "high" on IE and OC than are so nominated on FO and LQ. It would appear, then, that friends are more readily seen to have leadership qualities or future

TABLE II

Mean of Friends Chosen High on Eight Peer Nomination Forms at Various Stages of Training

Forms and Sets	Week in Training: Orientation Week	Third Week	Sixth Week
FO-RO	2.46 385*	2.19 382	2.24 374
FO-AU	2.36 354	2.18 357	2.09 348
IE-RO	1.98 130	1.58 127	1.50 125
IE-AU	1.92 129	1.72 131	1.69 128
OC-RO	1.85 126	1.60 125	1.63 123
OC-AU	1.97 95	1.77 96	1.39 92
LQ-RO	2.29 129	2.02 130	2.10 126
LQ-AU	2.37 130	1.90 130	1.97 128

* The figure beneath each mean indicates the number of nominators upon which the mean is based.

TABLE IIa

Summary of Analysis of Variance for Table II with Assumption of One Case Per Cell

Source	Sum of Squares	df	Mean Square	F
(1) Form	1.3585	3	.4528	39.50 **(From 7)
(2) Time	.4937	2	.2469	21.28 ** "
(3) Set	.0005	1	.0005	--
(4) F x T	.0398	6	.0066	--
(5) T x S	.0174	2	.0087	--
(6) F x S	.0282	3	.0094	--
(7) Residual	.0696	6	.0116	
TOTAL	2.0077	23		

** 1% Level

officer potential than they are seen to have interest and enthusiasm in the Naval Service or a high probability of success in OCS. One may view this, in part, as an index of the relative value assigned these characteristics in friendship choice itself--or, more basically, as a likely sign of the motivation pattern among officer candidates circa 1955.

Over time, the data in Table II indicate that significantly more friends (1% level) are nominated as "high" on the various forms at the orientation week than are so nominated either at the third or the sixth week of training; the latter two readings are not significantly different from one another. It may be suggested that the higher means for the first reading are accountable in terms of relatively fewer contacts and a resultant dependence upon friends' names.

In Table III, correlation coefficients between friendship scores and various peer nomination scores are provided. It will be seen that all of these coefficients are significant beyond the 1% level, thus revealing that peer nomination scores do contain a "popularity" weight.

Using the first three columns in this table, an analysis of variance of coefficients was completed following their transformation to Fisher's z function; these z's were then treated as any other numbers. This is summarized in Table IIIa. Since the N's upon which the coefficients were initially based have been eliminated in this analysis, the outcome leans toward the conservative side. The consequences of this approach have been considered above.

Among the variables involved, only the independent effect of form is significant. Returning to Table III, it was found that, in general, FO and LQ yielded a significantly higher relationship (1% level) with the friendship score than did IE or OC. This duplicates the findings of the analysis completed with Table II.

TABLE III

Correlation Between Friendship Scores and Eight Peer Nomination Scores at Various Stages of Training

Forms and Sets	Week in Training: Orientation Week	Third Week	Sixth Week	Thirteenth Week
FO-RO	.56	.58	.64	.63
	388*	382	374	358
FO-AU	.54	.58	.57	.66
	354	357	348	324
IE-RO	.45	.26	.37	
	130	127	125	
IE-AU	.45	.45	.54	
	129	131	128	
OC-RO	.36	.37	.38	
	128	125	123	
OC-AU	.48	.40	.34	
	95	96	92	
LQ-RO	.62	.64	.62	
	130	130	126	
LQ-AU	.64	.57	.58	
	130	130	128	

Note: All of the above coefficients are significant beyond the 1% level.

* The number beneath each coefficient indicates the N upon which it is based.

TABLE IIIa

Summary of Analysis of Variance for Table III:
Following z Transformation of Correlation Coefficients

Source	Sum of Squares	df	Mean Square	F
(1) Form	.4118	3	.1373	27.46 ** (From 7)
(2) Time	.0062	2	.0031	--
(3) Set	.0026	1	.0026	--
(4) F x T	.0275	6	.0046	--
(5) T x S	.0020	2	.0010	--
(6) F x S	.0362	3	.0121	2.42 NS (From 7)
(7) Residual	.0302	6	.0050	
TOTAL	.5165	23		

** 1% Level
NS Not Significant

In order to provide a foundation for ascertaining the effect of the friendship score on validity, these scores were correlated with final OCS academic average as a basic in-training criterion. These are presented in Table IV. Lest confusion arise, this table should be read in terms of people who received a given treatment through training, and the relationship of these two variables for them. The calculation of these by a form, set, time breakdown--as given--is meaningful only in the analysis to come, rather than for its own sake.

The variation among these coefficients leads to the view that treatment differences were reflected even in this relationship. With regard to time, it is notable that a progressive increase is found in the number of significant coefficients from the orientation week on through the thirteenth week. Evidently, popularity bore an increasing relationship to the final academic criterion, in this setting.

The ultimate problem of limitation of validity is covered by the data of Table V. With the coefficients provided in Tables III and IV, and the peer nomination validity coefficients against the academic criterion available from the second report (4), it was possible to partial the effect of friendship so as to obtain "purified" validities. In Table V, the original validities are given with their corrected value indicated in parentheses. While upward and downward changes are manifested, the global picture is one of stability. No coefficients were significantly altered by the partialing process; the differential level of prediction, for various treatments, and at various times, remains substantially the same.

TABLE IV

Validity Coefficients Against Final OCS Academic Average for Friendship Scores within Treatment Blocks and Time Levels

Treatment Block	N	Week in Training: Orientation Week	Third Week	Sixth Week	Thirteenth Week
ACE(FO-RO)	352	.01	.15**	.21**	.20**
BDF(FO-AU)	321	-.01	.10	.13*	.17**
A (IE-RO)	119	.00	.06	.14	.18
B (IE-AU)	117	-.06	.11	.15	.26**
C (OC-RO)	115	-.12	.12	.26**	.20*
D (OC-AU)	82	.04	.22*	.18	.24*
E (LQ-RO)	118	.15	.27**	.22*	.23**
F (LQ-AU)	122	.01	.01	.08	.05

* 5% Level
** 1% Level

TABLE V

Validity Coefficients Against Final OCS Academic Average for Eight Peer Nomination Forms at Various Stages of Training with Corrected Values After Partialing of Friendship Scores

Forms and Sets	N	Week in Training: Orientation Week	Third Week	Sixth Week	Thirteenth Week
FO-RO	349	.15**(.17)	.46**(.46)	.51**(.51)	.47**(.45)
FO-AU	320	.12* (.15)	.39**(.41)	.40**(.41)	.41**(.41)
IE-RO	119	.05 (.05)	.22* (.21)	.16 (.12)	
IE-AU	116	.29**(.36)	.41**(.40)	.30**(.27)	
OC-RO	112	.31**(.37)	.70**(.71)	.73**(.70)	
OC-AU	82	.32**(.34)	.74**(.73)	.83**(.83)	
LQ-RO	118	.29**(.26)	.45**(.37)	.54**(.49)	
LQ-AU	122	.10 (.07)	.22* (.31)	.25**(.25)	

* 5% Level
** 1% Level

XII. Conclusions

From the results obtained, several conclusions emerge. Most important among them is rejection of the contention that friendship operates as an adversely biasing and invalidating factor in peer ratings.

It is true, of course, that friends do receive a somewhat larger number of "high" nominations than their actual proportion would indicate. But the aggregative effect of this--in the "popularity" sense--does not lead to a generalized diminution of validity. Thus, though popularity tends to have a weight in peer nomination scores, this fails to alter basic prediction. Moreover, it is quite possible that this weighting may arise from some greater premium attached to having friends of acknowledged high status on certain other continua, as opposed to simply creating high status for friends.

In this connection, we may note the finding that friendship bears varying relationships to the characteristic to be rated. That such an element of discrimination is present tends to contraindicate the operation of a persistent bias in favor of friends. It is worth noting, too, that the evidence reveals no generalized differences in the relationship of friendship to peer nominations for the "research" as against the "administrative" set. One might have hypothesized that the latter would yield more signs of a biasing effect than the former, if friendship was operating as a prime element in nominations.

While these results may illuminate the issue, it should be pointed out that validity here was narrowed to but one kind of criterion. It could well be that somewhat different patterns might have evidenced themselves had we studied a post-training criterion. Nevertheless, there is good reason to believe that the application of peer ratings provides considerably more prediction than would a popularity contest.

Bibliography

1. Anderhalter, O. F., Wilkins, W. L., and Rigby, M. K. Peer Ratings. Technical Report No. 2. St. Louis: St. Louis University, 30 November 1952.

2. Hollander, E. P. Buddy Ratings: Military Research and Industrial Implications. Personnel Psychology, 1954, 7, 385-393.

3. Hollander, E. P. Conditions Affecting the Military Utilization of Peer Ratings: The Newport Study. I. Reliability. Navy Technical Report 1-56. Pittsburgh: Psychological Laboratories, Carnegie Institute of Technology, January, 1956.

4. Hollander, E. P. Conditions Affecting the Military Utilization of Peer Ratings: The Newport Study. II. Validity Against In-Training Criteria. Navy Technical Report 2-56. Pittsburgh: Psychological Laboratories, Carnegie Institute of Technology, February, 1956.

5. Hollander, E. P. Peer Nominations on Leadership as a Predictor of the Pass-Fail Criterion in Naval Air Training. Journal of Applied Psychology, 1954, 38, 150-153.

6. Hollander, E. P. Studies of Leadership Among Naval Aviation Cadets. Journal of Aviation Medicine, 1954, 25, 164-170, 200.

7. Hollander, E. P. and Webb, W. B. Leadership, Followership, and Friendship: An Analysis of Peer Nominations. Journal of Abnormal and Social Psychology, 1955, 50, 163-167.

8. Jenkins, J. G. The Nominating Technique as a Method of Evaluating Air Group Morale. Journal of Aviation Medicine, 1948, 19, 12-19.

9. McClure, G. E., Tupes, E. C., and Dailey, J. T. Research on Criteria of Officer Effectiveness. Research Bulletin 51-8. San Antonio: Human Resources Research Center, Lackland Air Force Base, May, 1951.

10. Ricciuti, Henry N. and French, J. W. Development of Personality Tests for Naval Officer Selection: I. Analysis of U. S. Naval Academy Criterion of Aptitude for Service. Technical Report No. 1, Princeton, N. J.: Educational Testing Service, March, 1951.

11. Suci, G. J., Vallance, T. R., and Glickman, A. S. An Analysis of Peer Ratings: I. The Assessment of Reliability of Several Question Forms and Techniques Used at the Naval Officer Candidate School. Technical Bulletin 54-9. Washington, D. C.: Bureau of Naval Personnel, June, 1954.

12. Vaughn, C. L. The Nominating Technique. In New Methods in Applied Psychology. College Park: University of Maryland, 1947, 22-25.

13. Webb, W. B. and Hollander, E. P. Comparison of Three Morale Measures: A Survey, Pooled Group Judgments, and Self Evaluation. Journal of Applied Psychology, 1956, 40, 17-20.

14. Wherry, R. J. and Fryer, D. H. Buddy Ratings: Popularity Contest or Leadership Criterion? Personnel Psychology, 1949, 2, 147-159.

15. Williams, S. B. and Leavitt, H. J. Group Opinion as a Predictor of Military Leadership. Journal of Consulting Psychology, 1947, XI, 283-291.

16. Follow-up Study of Officer Performance of West Point Graduates. PRS Report #767, Washington, D. C.: Personnel Research Section, AGO, 1948.

17. Follow-up Validation of Predictor Instruments for West Point Classes of 1944, 1945, and 1946 Against 1948 Ratings on DA AGO Form 67-1. PRS Report #811, Washington, D. C.: Personnel Research Section, AGO, 1949.

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APPENDIX A—FORM FO-RO

U. S. NAVAL SCHOOL, OFFICER CANDIDATE
NEWPORT, RHODE ISLAND

You have been together with the men in this room since you entered OCS. From this contact, you will have formed certain impressions of them regarding their future success as Naval Officers.

Considering these impressions, and carefully weighing the qualities required in a successful Naval Officer, you are to select the five members of your section whom you consider to have the highest promise as Naval Officers, and the five members of your section whom you consider to have the lowest promise as Naval Officers.

THE RESULTS OF THESE RATINGS ARE TO BE USED FOR RESEARCH PURPOSES ONLY AND WILL NOT AFFECT YOUR NAVY CAREER.

Specifically, you are to perform these exact operations:

1. Consult the section roster which has been provided you and draw a line through your own name.

2. Study the remaining names on the roster and select the individual with the highest promise of success as a Naval Officer. Enter this name in the space labeled H-1 below and then draw a line through that name on the roster.

3. Study the roster again and then select the individual with the lowest promise. Enter this name in the space labeled L-1 below and then draw a line through that name on the roster.

4. Continue the study of this roster, alternately selecting individuals with the highest promise and the lowest promise, until you have entered ten names. Draw a line through each name on the roster as you write it in the proper place here.

HIGHEST PROMISE _____ H-1

_____ H-2

_____ H-3

_____ H-4

_____ H-5

_____ L-5

_____ L-4

_____ L-3

_____ L-2

LOWEST PROMISE _____ L-1

APPENDIX B--FRIENDSHIP FORM

U. S. NAVAL SCHOOL, OFFICER CANDIDATE
NEWPORT, RHODE ISLAND

Below you will find five spaces. In these spaces you are to list the five members of your section whom you consider as friends --or whom you would like to have as friends.

If you list someone in your section whom you knew before you actually reported to OCS, you are to circle his name.

THIS INFORMATION WILL BE USED FOR RESEARCH PURPOSES ONLY AND WILL NOT AFFECT YOUR NAVY CAREER.

_____

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_____

_____

_____